



AF/ 3679
IFW/ 4

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : YAGYU, Walter T.
Appl. No. : 10/020,275
Filed : December 18, 2001
Title : TIE ROD WITH APPLICATION OF POLYMER
COMPOSITE WITH FIBERS REINFORCEMENT

Group Art Unit : 3679
Examiner : FERGUSON, M.

Docket No. : 08200.608

APPELLANT'S BRIEF UNDER 37 C.F.R. § 1.192

October 25, 2004

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Dear Sir:

In follow-up to the Notice of Appeal filed June 23, 2004, Appellant respectfully requests the Board of Patent Appeals and Interferences consider the following arguments and reverse the decision of the Examiner in whole. Applicant has concurrently filed a petition for a two-month extension of time. No further extensions are deemed necessary; however, the Commissioner is hereby authorized to charge applicant's deposition account no. 50-0548 to maintain the pendency of this application.

(1) Real Party in Interest

The real party in interest is DANA INDUSTRIAL S/A.

(2) Related Appeals and Interferences

There are no known related appeals or interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal.

(3) STATUS OF CLAIMS

1. Claims 1-3 were originally filed with the specification on December 18, 2001.
2. In the Official Action dated April 4, 2003, the Examiner objected claims 1-3 because of minor informalities, and rejected claim 1 under 35 U.S.C. 102(b) as being anticipated by Kobayashi (USP 5,092,703) (hereinafter referred to as Kobayashi). Claims 1 and 2 were rejected under 35 U.S.C. 103(a) as being unpatentable over Pazdirek et al. (USP 6,398,446)) (hereinafter referred to as Pazdirek) in view of Kobayashi. Claims 1 and 3 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (USP 5,368,408) (hereinafter referred to as Shimizu) in view of Kobayashi.
3. On August 4, 2003 Appellant filed Amendment amending claims 1-3, and presenting arguments for the patentability of claims 1-3.
4. In the Final Official Action dated March 23, 2004, the Examiner objected claim 2 because of minor informalities, and rejected claims 1 and 3 under 35 U.S.C. 103(a) as being

unpatentable over Shimizu in view of Kobayashi. Claim 2 was rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Kobayashi as applied to claim 1, and further in view of Pazdirek.

5. On June 23, 2004 Appellant filed a Notice of Appeal.

(4) STATUS OF AMENDMENT

The Office Action finally rejecting claims 1-3 was mailed on March 23, 2004. Applicant then filed a notice of appeal on June 23, 2004 to appeal the Examiner's rejection of claims 1-9.

Subsequently, there have been no other papers filed by the Appellant or issued by the U.S. PTO.

(5) SUMMARY OF THE INVENTION

The instant invention is directed to a tie rod comprising a stem provided at its ends with ball joints each composed of a metallic ball joint box, a bearing, a protection cover and a ball pin. The tie rod is provided for fixing pieces and components of a mechanical system between themselves, while allowing angular and rotational movement therebetween, supporting the strains concentrated therein. The stem of the tie rod is made of material comprising a polymer composite with fiber reinforcements and combined with components of the metallic ball joint box. The ball joints are attached to the ends of the stem by chemical fixing that, due to the process of application, cure and drying, assures the resistance required

to the objective to which ball joints are intended, making the tie rod a tie rod with fixed length. Alternatively, the ball joints are attached to the ends of the stem by means of a thread on the body of the stem and in the ball joints' boxes, making the tie rod a tie rod with variable length. The adjustment of its length and the locking of the tie rod being is provided by nuts provided on the threads of the stem and that are tightened against the boxes of the ball joints.

(6) ISSUES

1. Whether claims 1 and 3 are patentable over Shimizu in view of Kobayashi.
2. Whether claim 2 is patentable over Shimizu in view of Kobayashi as applied to claim 1, and further in view of Pazdirek.

(7) GROUPING OF THE CLAIMS

Claims 1-3 are separately patentable.

(8) ARGUMENTS

Sub-paragraph (i)

This sub-paragraph is not applicable to the instant appeal in so far as there are no rejections under 35 U.S.C. § 112, first paragraph.

Sub-paragraph (ii)

This sub-paragraph is not applicable to the instant appeal in so far as there are no rejections under 35 U.S.C. § 112, second paragraph.

Sub-Paragraph (iii)

This sub-paragraph is not applicable to the instant appeal in so far as there are no rejections under 35 U.S.C. § 102.

Sub-paragraph (iv)

Claims 1 and 3 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Kobayashi. It is noted that claim 1 is independent claim, and claim 3 depends on claim 1.

Regarding claim 1: The Examiner admitted that Shimizu fails to disclose the tie rod made of material comprising a polymer composite with fiber reinforcements, and secured to the metallic ball joint box.

Kobayashi fails to disclose the stem of the tie rod made of material comprising a polymer composite with fiber reinforcements and connected to the metallic ball joint box. Kobayashi teaches a ball joint including a housing having two inner chambers in which spherical head portions of ball studs are housed. The housing is formed of a composite material composed by mixing an inorganic filler, e.g., glass fiber in polypropylene.

The Examiner erroneously alleges that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Shimizu and Kobayashi, and that the combination of Shimizu and Kobayashi would constitute the claimed invention as recited in claim 1.

First, MPEP 2143.01 specifically states that the mere fact that reference can be modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682, 16 USPQ2d at 1432.). See also *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992). The Examiner does not provide any piece of the prior art that would disclose or suggest the claimed invention. Thus, it would not be obvious, absent teaching or motivation, to alter Shimizu in view of Kobayashi in the manner suggested by the Examiner.

Second, one of ordinary skill in the art combining the teachings of Shimizu and Kobayashi would replace both the metallic socket 3 and the metallic tie rod 5 of Shimizu with the similar parts formed of the composite material. Contrary to this, the claimed invention as recited in claim 1 has a combination of the metallic socket (ball joint box) and the tie rod made of a polymer composite with fiber reinforcements. Even if combination and modification of Shimizu and Kobayashi suggested by the Examiner could be made, the resulting device still would lack the composite tie rod connected to the metallic ball joint box.

Third, the prior art references applied by the Examiner fail to teach a combination of different materials forming the ball joint and the tie rod. Thus, the combination of the prior art documents applied by the Examiner will not result in the combination of materials set forth in claim 1. Instead, the prior art teaches either all composite structures or all metal structures.

Therefore, the Examiner's rejection of claim 1 under 35 U.S.C. 103(a) is improper.

Regarding claim 3: In addition to the above arguments regarding the rejection of claim 1, none of the prior art references applied by the Examiner teaches the composite tie rod threadedly and adjustably connected to the metallic ball joint box. Therefore, the Examiner's rejection of claim 3 under 35 U.S.C. 103(a) is improper.

Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Kobayashi as applied to claim 1, and further in view of Pazdirek. It is noted that claim 2 depends on claim 1.

Regarding claim 2: In addition to the above arguments regarding the rejection of claim 1, none of the prior art references applied by the Examiner teaches the composite tie rod attached to the metallic ball joint box by chemical fixing. Again, the prior art references applied by the Examiner fail to teach a combination of different materials forming the ball joint and the tie rod. Thus, one of ordinary skill in the art would not find the invention of claim 3 obvious in view of the teaching of Shimizu, Kobayashi and Pazdirek. Therefore, the Examiner's rejection of claim 2 under 35 U.S.C. 103(a) is improper.

Sub-paragraph (v)

This sub-paragraph is not applicable to the instant appeal in so far as the final rejection does not raise any issues other than those referred to in sub-paragraphs (i)-(iv).

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance, and notice to that effect is earnestly solicited. Appellant will request an oral hearing on the merits within two months after the date of the Examiner's answer.

Respectfully submitted:
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(9) APPENDIX OF CLAIMS ON APPEAL

1. Tie rod with application of polymer composite with fiber reinforcement, comprising a stem provided at its ends with ball joints each composed of a metallic ball joint box, a bearing, a protection cover and a ball pin, said tie rod having the function of fixing pieces and components of a mechanical system between themselves, providing to them angular and rotational movement, supporting the strains concentrated therein, wherein the stem of the tie rod is made of material comprising a polymer composite with fiber reinforcements, and combined with components of the metallic ball joint box.

2. Tie rod with application of polymer composite with fiber reinforcement, according to claim 1, wherein the ball joints are attached to the ends of the stem by chemical fixing that, due to the process of application, cure and drying, assures the resistance required to the objective to which ball joints are intended, making the tie rod a tie rod with fixed length.

3. Tie rod with application of polymer composite with fiber reinforcement, according to claim 1, wherein the ball joints are attached to the ends of the stem by means of a thread on the body of the stem and in the ball joints' boxes, making the tie rod a tie rod with variable length, the adjustment of its length and the locking of the tie rod being provided by nuts provided on the threads of the stem and that are tightened against the boxes of the ball joints.